THE OPTICAL MAGIC LANTERN JOURNAL AND PHOTOGRAPHIC ENLARGER.

A Magazine of Popular Science for the Lecture-room and the Domestic Circle

Edited by J. HAY TAYLOR.

[Entered at Stationers' Hall.]

Vol. 2.—No. 13. JUNE 1, 1890. Price One Penny.

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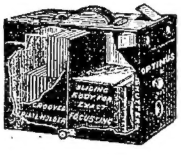

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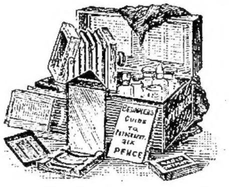

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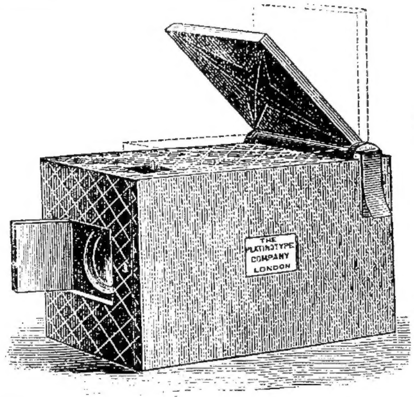

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THE OPTICAL MAGIC LANTERN JOURNAL AND PHOTOGRAPHIC ENLARGER.

EDITED BY J. HAY TAYLOR.

Vol. 2.—No. 13. [Entered at Stationers' Hall.] JUNE 1, 1890. Price One Penny.

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Notices.

THE *Optical Magic Lantern Journal and Photographic Enlarger* is issued on the 1st of every month, price One Penny, and may be obtained from all Newsvendors, Railway News Stalls, Photographic Dealers, or from the Publishers, at the following rates, post free :—

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Notes.

BINDING Cases for this Journal are now ready, price 1s., post-free 1s. 1½d.

* * *

THE Photographic Convention (Chester) will meet on the 23rd inst. for six days.

* * *

IN the United States, optical lanterns are, as a rule, made smaller than in this country.

* * *

SOCIETY reports, which should be short, must reach us as early as possible before the 24th of each month to insure insertion in the forthcoming issue.

* * *

Two hand cameras of an ingenious nature are shortly to be introduced in London. The one by Mr. E. G. Wood, of Cheapside, and the other by Mr. Walter Tyler, of Waterloo-road.

* * *

AT a recent exhibition of lantern slides in Hoboken, N.J., it was explained that some of the negatives from which the slides were made were obtained from the roofs of trains whilst in motion.

* * *

THE optical lantern is known by many different names. One of the latest is the Graphiscioptricon, which is described as being "The most powerful oxy-hydric limelight dissolving view projector and microscopic combination in the world."

* * *

THE City Photographic Exhibition (Drapers' Hall, London), under the auspices of the Photographic Trades' Section of the London Chamber of Commerce, has been formally opened. The Soirée was a brilliant success, upwards of a thousand persons being present.

* * *

METALLIC bindings for lantern slides are, we understand, to be extensively introduced during the coming season. These will be particularly useful for those who hire out slides, as the time occupied in repairing the paper bindings is considerable. The employment of gum or glue instead of paste is a frequent cause of the paper separating from the glass.

* * *

A SET of lantern slides (the White Mountains of New Hampshire) has been received by the Liverpool Amateur Photographic Association from the Boston (U.S.) Photographic Club. They will, during the next season, be lent to different societies throughout the country. They are the work of the members of the club from which they were sent.

Systematic Copying of Engravings for Slides.

FOLLOWING up the idea of preparing lantern slides from engravings in books, as thrown out in our last number, by Mr. W. Bloxham, we devote this article, in deference to the wishes of several readers, to describing means by which the leaves of a volume, even if a heavy bound one, can be kept flat during the process of photographing its engravings.

By the method about to be described only one adjustment of the camera is necessary, for when the focussing has once been made it remains good not alone for that engraving upon which the adjustment was made, but for any number of others of the same size which may be photographed in succession.

The principle of the arrangement consists in having a strong wooden frame, with an aperture large enough to show the picture clear to the edges. This frame is erected near one end of a board, not less than the frame in width, and of a length sufficient to admit of the camera being placed upon it at the required distance. The volume of engravings is opened, and the selected one is pressed against the back of the frame and held in close contact with it during the operation of photographing. This is the principle. We now enter into a more detailed description.

The frame must be an inch in width and well jointed at the corners. Its size must be determined by that of the largest book, containing the matter to be copied, that is likely to be used. For smaller books it will hereafter be seen that due provision has been made. This frame must be fixed to the base board by its outer edges, and must be raised from it to the extent of about two inches. The object of this is to allow a half-opened book to lie or rest upon the base-board, while the other part is pressed against the back of the frame, by which it is kept quite flat for focussing. The book is, therefore, supposed to be opened at a right angle, the lower half of it being passed under the erect frame and supported on the base.

To keep the book in position it must be clamped temporarily to the frame. This is done by two small carpenter's handscrews, procurable at every tool shop, at a cost of about a shilling each. One jaw of this is applied to the back of the book, and the other to the face of the frame, and when screwed tight, the whole thing is held rigidly. These handscrews or clamps may be had of various sizes, and of course their selection must be determined by the weight of the book likely to be copied from, as this latter may range from a strongly-bound volume of the *Art Journal* to a single part of an octavo.

The camera is made to travel on the elongated table or baseboard spoken of, and when the size and focussing have been roughly determined, it is fixed to the board by means of the tripod screw, and the focussing then finally adjusted by the means contained in every camera itself. The whole may then be lifted and placed on a table near the window, so as to have the engraving properly lighted.

When the focussing has been once done properly, it stands to reason that as the ground glass, the lens, and the plane against which the engraving is pressed are three constants, it will not be necessary to disturb the arrangements, as everything presented at the plane will be in sharp focus.

To accommodate books or prints of much smaller size than the largest which the frame is capable of holding, one or more loose inner frames must be provided like the holders or "kits" in a studio camera. These need not, however, be complete frames, as one having only three sides permits a better placing of a small volume. The main condition in their construction is, that when such a holder or adaptor is used its back shall be flush with that of the main frame. This ensures all printed sheets, whether they be large or small, that are pressed in contact with the erect frame, being invariably in sharp focus.

The precise location of the camera can either be ascertained by trial or by the application of the well-known rule by which we shall close this article. But at starting, let it be well understood that whatever the focus of the lens that is to be used, the camera must be capable of being expanded to twice that focus in order to copy a thing its own size, and if the camera will not do this, then must a lens of shorter focus be got.

The rule for reducing a picture is this:—Having ascertained how many times an engraving

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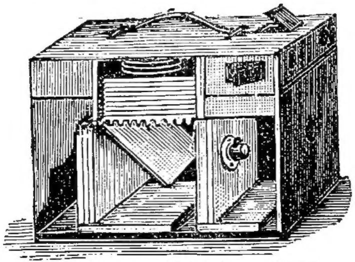

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exceeds in dimensions the negative to be taken, add one to the number of times and multiply by the focus of the lens, to show the distance at which the negative must be from the lens. The distance between the lens and the sensitive plate is found by dividing the product above given by the number of times one is larger than the other, the quotient giving the distance. As the lenses employed for such purposes may vary from 4in. to 6in. in focus, we shall give a few examples. With a lens of 4in. focus, and a reduction of two times, the figures representing the distance between the engraving and the lens on the one hand, and the sensitive plate and lens on the other, will be respectively 6in. and 12in. If the reduction is three times, the distances will be 5¼in. and 16in. For a 5in. lens for a reduction of two times, it would be 6⅔in. and 20in. For a 6in. focus lens, the two and three times would be respectively 9in. and 18in., and 8in. and 24in.

——:o:——

Hand Cameras for Obtaining Slides for the Lantern.

No. 2.—THE QUADRANT.

A NEW camera bearing the name "Quadrant" is about to be introduced to the public by Messrs. W. H. Humphries and Co., of 268, Upper-street, Islington, N.

It is the invention of Messrs. Parfitt and Hume, gentlemen well known in photographic circles. By its ingenious yet simple construction it will doubtless be much sought after as a means for obtaining negatives, from which may be produced, by contact, lantern transparencies—a branch of photography which has received great impetus of late.

The "Quadrant" hand camera has no projecting knobs in sight, all the movements being effected from underneath the instrument. These movements consist of focussing, changing the plates, setting and releasing the shutter. A disc, also placed under the camera, denotes the plate about to be exposed.

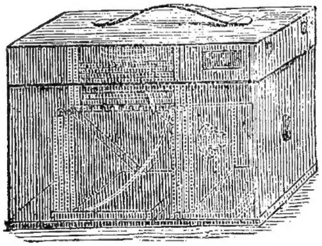

FIG. 1.

The plates—which are contained in metal holders provided with two pivots on the upper part, in such a manner that they will act as hangers—are placed horizontally in a receptacle situated above the camera proper (Fig. 1). The pivots of the underneath plate fall between two metallic teeth, fastened on the upper part of a moveable three-sided box or sliding division. The other edge of the plate is supported on a strip of metal, but as soon as the partition containing the serrated metal edge is drawn backwards, the lowest plate is pulled back sufficient to liberate it from the projecting slip which held it in a horizontal position, when it immediately swings on the pivots into a perpendicular position, where it is ready for exposure. The pivots of the next plate then fall between the second set of teeth, and the plate rests on the metal strip ready to be dropped into the horizontal as soon as the partition above mentioned has again been drawn slightly backwards. Each plate in turn thus falls between its respective set of teeth and drops, and in so doing passes over a slight spring, which retains it in the necessary position for exposure.

When it is desired to remove the plates for development, the box with the serrated edge is drawn out through a door in the end of the camera.

From the cut (Fig. 2), which represents the bottom of the camera, will be seen the various means by which the motions are imparted. The partition carrying the lens is secured to A, focussing being attained by moving B on the graduated scale C. Under D is a plunger which is pushed into a series of holes or notches in the under side of the sliding box, by a slight movement of G; and by a still further movement strikes on F. and carries the box backwards the required distance. When the lever G is afterwards pushed back to E, the plunger drops so as to allow of its being carried immediately under the next hole.

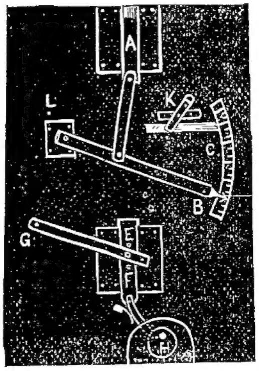

FIG. 2.

This movement also causes a ratchet to operate upon a wheel containing numbers, which may be seen through the opening at H.

The shutter is a double leaved one, which gives slightly less exposure to the sky than the foreground. It is set by the movement of the lever K, and is released by a touch at the knob L. Newman's pneumatic regulator can be attached for time exposures.

It is the intention to supply this camera to hold either 12, 18, or 24 plates, and to fit them with single achromatic and rectilinear lenses, and also with two finders.

A camera to hold 12 plates measures 10in. by 7in. by 5¼in., and weighs about 6lb. when charged.

The Lantern Society.

THE session proper of this society is to commence about the end of September. Although the committee have under consideration several propositions respecting the most central and convenient premises, yet up to the present date no definite decision has been made regarding the rooms or hall to be engaged ; but as the committee meet on June 11th, doubtless the locality will then be decided upon. The council have suggested that the objects of this society may be best attained :—

(1) By the engaging of premises in some central position in London, at which the meetings of the council and of the society may be held ; (2) by acquiring suitable apparatus for the purpose of giving exhibitions of general and scientific interest to both members and their friends ; (3) by obtaining the services of specialists in every branch of art or science suited to optical demonstration ; (4) by offering—as far as the funds of the society will permit—remuneration or awards for the development of the optical lantern, and all apparatus pertaining thereto ; (5) by imparting instruction to those who are desirous of learning how to effectively manipulate the optical lantern, to produce slides and apparatus, and to efficiently employ the same both in private and public ; (6) by securing for the members of the society special and advantageous terms from manufacturers and others for the purchase or loan of apparatus and slides ; (7) by forming a large and comprehensive loan collection of lantern transparencies pertaining in art, science, and kindred subjects; such loan collection to be placed at the disposal of every member upon conditions to be laid down by the council ; (8) by providing a means of inter-communication between the members of the society, whereby each member may be made acquainted with the private collections of his fellow-members, and may be able to negotiate a mutual loan if so desired ; (9) by arranging an interchange of demonstrations between photographic, microscopical, and other societies interested in optical lantern work.

Already about forty members have been enrolled, and we would suggest that those desirous of joining should consult the hon. sec., Lieut. C. E. Gladstone, R.N., 6, Bolton-street, Piccadilly, W.

:o:

Lantern Slide Work.[*]

THERE is no better or more pleasing way of showing photographs than by exhibiting them on a screen by the aid of the optical lantern ; the fact that so many people go to our lantern exhibitions is in itself a proof that this branch of photographic work is appreciated, and to the photographer the artistic qualities and *failings* of his work become more manifest when seen enlarged on the screen than, when viewed on a small print. It may be well to allude to the best size of camera to work with, as some amateurs do not care to make anything but lantern slides. Small cameras are made to take a plate 3¼ square, and although this may do for ordinary landscape work, it is practically useless for instantaneous photography, such as marine and seaside studies, cattle pieces and other moving objects. Many who work ¼-plate cameras have found them too small for this class of work, and have been considerably disappointed when the plate has been developed to find nothing but a barren waste of water, or a field with the surrounding fence as the only subject on the plate. I would, therefore, advise nothing less than ¼-plate, or 5 by 4.

Lantern slides are made either by "direct contact," or by "reduction" from the negative by re-photographing from the negative.

Slide making by "direct contact" is the plan most generally adopted by amateurs, because of the ease with which it can be done by artificial light ; but I very much prefer, however, making slides by "reduction," especially if working from a ½-plate or larger negative. No doubt very good slides are made from ¼-plate negatives by "contact," but how few pleasing ones are made from the larger sized negatives in this way, for when taking a view with the camera, you study the proportions and composition of the picture in relation to the size of the plate you are working, and not simply with the idea of printing out a picture 3¼ square ; it is only by "reduction" you can get the full value of your negative on the lantern plate. Another advantage obtained by "reducing" is that a soft slide may be made from a hard negative, and also good slides from poor and faulty negatives, negatives from which it would be impossible to make a slide by "contact," or even to get a passable silver print from. In "contact" printing the length of exposure required of course varies according to the make of plate used, and the density of the negative. I think it is best to have one fixed distance from the light for exposing the slide, and to vary the *time* of exposure according to the density of the negative, rather than vary the distance. If the *distance* the frame is held from the light be varied, always remember that the length of exposure will increase as the squares of the distances the frame is held from the illuminant, and not in a numerical ratio ; for example, if an exposure of ten seconds at the foot distance is sufficient, and the distance is increased to 3ft., an exposure of 90 seconds will be needful.

For making slides by "reduction" some sort of reducing frame is required to hold the camera and negative. The apparatus is, however, very simple. It consists of a base board, on which there is a sliding block to carry the camera at one end, and at the opposite end a deep box about 10in. or 12in. square, open at the end next the camera, the other end holding a sliding carrier in which to place the negative.

"Reductions" are best made by daylight. The plan I adopt is as follows : Having placed my reducing frame, on which I have fixed a ¼-plate camera, in front of an upper window (in the lower square of which I have inserted a sheet of ground glass for the purpose of diffusing the light), I place the negative in the sliding carrier and carefully focus it ; then stop down the lenses to U.S. 16, and expose the plate in the usual way. The exposure, of course, varies according to the light and density of the negative as in "contact" printing. A long exposure and retarded development will give warm tones ; a short exposure and active development will give black tones, and I find the tones are always warmer if the exposures are made on a bright sunny day than even with a long exposure on a dull day. I advise, however, that workers should adhere to one *standard strength* of developer; and for "contact" printing one *fixed distance* from the light for exposure, and produce the tone desired solely by the time of exposure. If this plan is adopted I am sure much more satisfactory results will be obtained than by continually altering the strength of the developer, and varying the distance the plate is held from the light.

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[*] Leeds Photographic Society.

Most of the slides prepared by professionals are made by the collodion or wet-plate process; very fine slides are also made by collodion-albumen.

It is generally considered that there are no lantern slides at all equal to those made by one or other of the collodion processes. No doubt for brightness and "sparkle" collodion slides are difficult to surpass; but there is often a want of half-tone about them, consequently little gradation between the high lights and shadows. The gelatine plate is running the collodion process a very hard race; and I venture to think (though it may be considered somewhat heterodox to even throw out the mere suggestion) that for softness and half-tone the gelatine plate holds the field. There are many good makes of plates on the market, and for those who do not care to make their own, I would say, Try several makes, and then stick to those you find give you the best results. I may say in passing that gelatino-chloride plates are of no use for reducing, as they are far too slow.

Lantern plates are usually developed by ferrous-oxalate, pyro and ammonia, pyro and washing soda, or hydroquinone. Formerly ferrous-oxalate was the favourite developer for lantern plate work, but it is not so much used now; the tones produced by it are always of a cold grey, and considerable care is required when working with it, for the slightest contact of hypo will cause a fog to spread over the plate. Pyro and ammonia is a favourite developer with many workers; some add a little carbonate of ammonia to obtain red tones. A very good developer, and one easy to work with, is washing soda and pyro. It gives pleasing tones, but it has, however, the disadvantage of often leaving a yellow fog on the plate, which must be removed by a clearing solution, and unless considerable care is used in clearing, many of the finer details may be entirely removed, and if allowed to remain in the solution too long the plate loses its sharpness, and looks very flat when shown on the screen.

Hydroquinone has now come into great favour as a developer for lantern plate work, and is the one I prefer to all others. It gives absolutely clear glass, and the slides require no clearing after development, unless they have been taken from thin or faulty negatives, when a little local clearing by means of a camel's hair brush may be required.

The formula that I like the best is one given by Thomas and Co., with their plates, viz.:—

No. 1.—Hydroquinone, 160grs.; sulphite soda, 2oz.; brom. amm., 20grs.; citric acid, 60grs.; water to 20oz.

No. 2.—Carbo. potash, 2oz.; carbo soda (crystallised), 2oz.; water to 20oz. Use equal quantity of each.

I generally develop four plates with 2¼oz. of solution. I have developed as many as 10; but four are quite sufficient, for after that number the developer becomes very slow, and has a tendency to "block" the shadows.

Eikonogen is said to produce very similar results to hydroquinone.

It is better to develop slides by artificial light rather than by daylight passing through some non-actinic medium; for daylight is so variable in its intensity that it renders it very difficult to judge the proper density of the slide in consequence, whereas by artificial light you can have one fixed standard, and develop the slides to pretty nearly an equal density.

It is desirable to develop a little denser than required, as the slide loses a little of its density in the fixing bath.

Immediately after placing the plate in the developing solution, pass a camel's hair brush (kept in a cup of water near the developing dish) rapidly over the plate, to remove any small air-bubbles which may be on the surface of the film.

After development the plate requires a good wash under the tap, and should then be placed in the fixing bath (hypo, 4oz.; water, 20oz.) and allowed to remain there for a few minutes after all whiteness has disappeared, so as to ensure thorough fixation.

Wash again after removal from the fixing solution, and place it for a short time in a saturated solution of alum to harden the film.

If working with hydroquinone, on no account place the plate in the alum solution *before* fixing, or you may obtain a result not to be desired.

If from any error in exposure, or the slide is taken from a thin negative, causing it to be opaque, when there ought to be clear glass, this opacity may be removed with a little care and patience by the aid of the following clearing solution:

Sulphate iron, 3oz.; alum, 1oz.; sulphuric acid, 1oz.; water, 20oz. Pour a little of this solution into a small dish, and place a basin containing clean water near, then holding the plate in the left hand with the sky or fogged part slanting downwards, so as to prevent the clearing solution running into the details of the picture. Paint with a small brush the clearing solution over the fogged part of the plate until it becomes quite clear, frequently dipping the plate into the water during the process, to prevent the clearing solution spreading over the plate. Any over dense shadow may also be reduced in this way. Before doing this, take care the slide has been in the alum bath.

Lantern slides must be quite free from fog or veil, and the above method will quite remove this defect, and if care is used the details of the picture will not be injured. GODFREY BINGLEY.

(To be continued.)

—:o:—

A Rival to the Electric Light.

IF the invention of Mr. W. J. Norton, of Pittsburgh, fulfils its promise, there is a dangerous rival of the electric light in the field, if not to petroleum. He has invented what is alleged to be the cheapest light ever known, and yet "a light as intense and as accurate in its illumination of colours as the sun at noonday." It is claimed that 500-candle power light of the kind in question can be run at the nominal cost of one cent an hour. Mr. Norton has for years been engaged in developing this light. The undertaking has been very quietly conducted. Recently he permitted a few capitalists to witness experiments with his device. These tests proved so successful that a temporary and private company was soon formed to patent and develop the brilliant idea. The light in question is essentially a chemical discovery rather than a mechanical idea, and consists of a peculiar tape that is fed by a simple clockwork. While it is peculiarly adapted to street or other stationary purposes of illumination, yet it is said to be also applicable to portable or hand lamps; and in point of intensity it is not surpassed by electricity, its light is much softer, and far easier to the eyes. It feeds itself, requires neither pipes, wires, or other connections, and in size may be produced from 300 to 7,000-candle power. It is absolutely non-explosive, emits no smoke or objectionable vapour, is applicable to any purpose, and can be handled with as equal safety by a child as by an adult.—*Chicago Journal of Commerce.*

:o:

Asbestos Between Lanterns.

I NOTICE that one of your correspondents asks advice about fastening the division in a biunial lantern. It may, perhaps, interest him and others to know that when I altered an old lantern some time ago to suit my requirements, I made the divisional shelf double, and filled the space with asbestos about an inch deep, with very satisfactory results. Small and compact lanterns are required, but so far as I can find out, there are none in the market. If "Lantern" would give his fellow-readers a description of his, after it is finished, I feel assured our Editor would give us all the benefit of it.—RALPH TEMPEST.

[We are always pleased to insert anything of a practical nature.—ED.]

:o:

Experiments with the Optical Lantern.*

WE are attempting too much to-night, and may make our excuses before we commence. What we are trying to do has never before been attempted; the changes in themselves are not troublesome, but the adjustments take some time and care. I feel at present as if we were commencing an unrehearsed pantomime, in which all the scenes stick, trap doors open under the wrong people, and the actors mix up their parts. All the demonstrations are simple enough in themselves, and would be comparatively child's play if an evening were given to each form of apparatus instead of the constant changing and pulling apart of the different arrangements and re-adjusting them quickly, with precision. We will do our best, and when I inform you that both Mr. Furnivel and his son are in charge of the lanterns, those of you who have had experience will know that department will be properly handled.

The object this evening is not to show you any pictures or special experiments, but rather to demonstrate to those who have lanterns a few of the experiments which may be made, and show, not only how much amusement may be obtained, but also how useful the apparatus may be made for educational purposes. For many of the experiments we shall show nothing more is needed than the common lantern with a lamp, and the alterations which are necessary are very simple, and easily made by an amateur workman. No doubt you are all familiar with the ordinary arrangement for showing slides, which consists of a source of light, which should be as small and intense as possible, a condensing lens which is made of two plano-convex lenses to collect the light, and the objective, which also has two separate lenses used to focus the image on the screen. The lens of the condenser nearest the light collects the rays and throws them in a parallel beam, the other lens collects this beam and concentrates it on the objective. If we unscrew the outer lens and remove it to any distance, we have in the space a parallel beam of light which we can reflect and turn about in any direction, and then throw on the screen. You see on the screen a photograph of an arrangement of this kind, where the parallel beam of light is reflected upwards by a mirror placed in a box; on the top of this box is placed the outer half of the condenser with the flat side upwards, and above this the objective at the proper distance. If we place on the horizontal surface of the condenser any slide or picture, this is projected on the ceiling, or with another mirror it can be thrown on the screen. If a pointed pencil or needle is used on this the pointer is also shown on the screen, and the lantern manipulator can lecture and use a pointer on the screen as easily as if he were at the screen itself. The same arrangement can be used for showing vibrations of plates of glass covered with sand, chemical experiments with shallow glass tanks, experiments with magnets and iron filings, and endless other demonstrations in physical science. This method of dividing the condenser seems to be almost unknown; the usual way is to place the light dangerously near the lens, and so obtain a parallel beam, using an extra and costly condensing lens to collect the beam. As you will see, this is simply a waste of money.

Another adaptation of existing parts will be found exceedingly useful. When a lantern is used, sometimes close to the screen, and at other times at a long distance, a necessity when the demonstration is given in rooms differing in size, it is usual to have costly objectives of different focal lengths. This is quite unnecessary. If we have, say, an objective which gives a 15ft. picture twenty feet from the lantern, by removing the back lens of the objective and setting the light nearer the condenser we shall get a 15ft. picture about forty feet away; if we remove both, and place the back lens in front, we shall get a 15ft. picture eighty feet from the screen. This enables us to work in rooms of any size, and obtain any size pictures we require with the same lenses. There may be a difference in lenses; the distances given are from my own. There is one little objection to this as regards the ordinary lantern in the fact that the objective requires to be brought much more forward, but it is a simple matter to separate this from the lantern body and mount it on a separate stand; in fact, this must be done before other experiments can be performed, all lanterns for physical demonstrations being made in this manner, and mounted on a long board with guides for placing the various appliances correctly in the centre. Replacing the lenses in their ordinary position, we will put in the slide carrier a plate with a narrow slit in it to get a thin line of light; before this we will place a prism which throws the spectrum on the screen, showing the decomposition of light. THOS. FLETCHER.

(To be continued.)

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* Warrington Literary and Philosophical Society.

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COWAN'S Gelatino Chloro-Bromide Plates.

(MARION & CO., SOLE PROPRIETORS.)

Specially prepared for making transparencies, in the Camera, or by Contact printing mith gas or other artificial light, also eminently suitable for reproduction of negatives and general copying purposes.

3¼ by 3¼ 1/0, 4¼ by 3¼ 1/0, 5 by 4 1/7, 6½ by 4¾ 2/3, 7½ by 5 3/5, 8½ by 4¼ 4/0, 8½ by 6½ 4/3, 9 by 7 5/0, 10 by 8 7/3
12 by 10 10/0, 13 by 8 10/0. Any other Sizes to Order charged in same proportion.

These plates are much slower than the ordinary Bromide used for Portrait and Landscape work, but much quicker than the pure Chloride Plates; in the camera they will be found to give, with full exposure, very brilliant images with clear glass in the unexposed parts, making them specially valuable for general copying purposes.

The exposure for contact printing by gaslight (using an ordinary fishtail burner at 12 inches distant) varies from 10 to 15 seconds upwards, according to the density of the negative: and with the camera, using lens with diaphragm about F24, and reflected sky as a source of light, 1 to 2 minutes will be required.

Any developers may be employed that work well with Bromide Plates, but the following are recommended:—The proportions are given for 10 ounces of developer only, so that by easy calculation each one may mix the quantity best suiting his requirements.

COWAN'S Gelatino-Chloride Plates.

MANUFACTURED AT SOUTHGATE BY

MARION & Co., 22 & 23, Soho Square, London, W.

3¼ by 3¼ 1/0, 4¼ by 3¼ 1/0, 5 by 4 1/7, 6½ by 4¾ 2/3, 7½ by 5 3/5, 8½ by 4¼ 4/0, 8½ by 6½ 4/3, 9 by 7 5/0,
10 by 8 7/3, 12 by 10 10/0, 13 by 8 10/0.

These plates in appearance differ entirely from the usual Bromide films, being very transparent, and of a deep orange colour by transmitted light, but are capable of development to any density required.

Though extremely sensitive to daylight, they are much less so to gaslight; so that more artificial light may be used during development than with Bromide Plates. This will be found to be of great advantage, as the plates may be examined from time to time within a reasonable distance of a gas-flame, and the density thus regulated to a great nicety.

The exposure to diffused daylight will vary from 1 to 5 seconds upwards, according to the density of the negative. For the reasons mentioned above, **it is not recommended to make the exposures to gaslight**, but a very reliable method, when a number of pictures are required exactly alike—or when it is necessary to work at night—is to burn a few inches of magnesium ribbon at from 6 to 18 inches from the negative, according to its density.

LANTERN SLIDE MAKING CAMERA.

(PATENT APPLIED FOR) 7983.

This Camera meets the long-felt want for an Instrument that is always ready at a moment's notice to produce Lantern Slides from the Photographer's Negative.

The usual preparations necessary (especially in the case of Amateurs) to take a Lantern Slide are only too well remembered for their inconveniences and vexations. Either the focus is found to be not quite satisfactory, or the intended amount of picture is not on the plate, or something else is wrong, with the result that it is very common to take several slides before a perfect one is secured.

With this Camera such mistakes and difficulties are impossible, as it is *fixed accurately* in *perfect focus, size*, and *position*. All that is required to expose a plate being to insert a negative in the grooves at one end (film towards the lens), and in the dark room put a lantern plate in the carrier provided for it at the other end, the caps effectually excluding all light except that passing through the lens. No dark slide or lens cap is required.

When the Negative and plate are in position, the Camera is carried out and pointed to the light, the exposure being 1 or 2 minutes, according to circumstances. The Camera is then carried back to the dark room, and the lantern plate taken out and developed.

The Instrument is made in three sizes:—the smallest making slides from ½-plate negative; the next making them from 1-1-plate negative; and the largest, an adjustable one, taking all sizes, from 12 by 10 downwards, most useful to the professional—but it must be remembered it requires setting for every size, like ordinary Cameras. The charm in always working from one size negative is, that there is never any setting to do.

Prices complete with excellent lens,
½-plate, 12/6. 1-1-plate, 15/-.
12 by 10, adjustable to any size, 21/-.

NOTE.—Lantern Slides being square, it is usual to copy a square of the negative. These Cameras are square, and take in the full width of the negative, and an equal extent of the length; but when desired they are made the same shape as the negative, so as to take in the whole of it—it then being of course necessary to employ a specially shaped mask to mount the slide up to advantage. We provide mask of the required shape. The latter form of Camera is 2/- extra on the half-plate, and 2/6 extra on the whole plate.

GRIFFITH'S ECONOMICAL ENLARGING CAMERA.

Having received a considerable number of enquiries and requests for an Enlarging Apparatus of the same style as the Lantern Camera, we have had a modification made which is properly adapted to enlarge from the ordinary negative, in a **simple, quick, and effective** manner, making the production of Enlargements as easy and pleasant an occupation as the Lantern Slide Camera has rendered Slide making.

Its outward appearance and size is very similar to the 12 by 10 Lantern Camera. One end has a carrier to hold either ½-plate or ¼-plate negative. A good and suitable lens is mounted in the sliding partition in the middle of Camera, while the other end "draws out" to focus, and is fitted with a specially designed "dark slide," in which either paper or glass, and opal plates, may be held for exposure.

Price Complete, with lens, 30/-; packing extra, 2/6.

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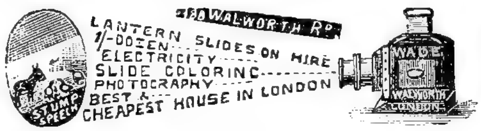

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Most suitable Hand Camera for making **Lantern Slide Negatives** is undoubtedly the Swinden and Earp's Patent

Most portable, most reliable, most simple. **20** *exposures without refilling. Write for particulars and specimens.*

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The International News Co., Duane Street, New York and at Toronto, and Montreal.

Editorial Table.

We have received Fallowfield's "Photographic Annual" (34th). It exceeds that for the previous year by about one hundred pages. Besides being a complete catalogue of the various apparatus sold by this firm, it also contains particulars of various formulae, together with about one hundred and fifty "hints," which will be found instructive reading.

Messrs. W. H. Humphreys and Co. have sent us for trial a bottle of "*The Drayton*" *one solution developer*. It produces vigorous negatives, and is said to keep well. This firm also make a very compact folding dark room lamp of japanned tin. When it is required to fold it, the front frame is removed and secured to the back, and the sides, top and bottom folded over it. When packed it measures 8in. by 4¾in. by 1¼in.

A set of Stanway's photographic plate lifters and holders has been received from Messrs. Mawson and Swan, who are the wholesale agents. The holders are slipped over the two opposite corners of a plate, which may then easily be lifted in or out of the various solutions. They are supplied in sets of four, price 2s. 6d. (two for developer and two for hypo), and of different colours, so as to be readily distinguishable. These lifters hold the plate very firmly and prevent the contamination of the fingers either with developer or hypo.

:o:

Correspondence.

SUCCESS OF SOCIETIES LARGELY DUE TO THE LANTERN.

[*To the Editor.*]

Sir,—Since this association was started two years ago, and possessed themselves of a lantern, exhibitions have been in great demand in this district. Any member has permission to borrow the lantern, either for his own private use or to use for a philanthropic purpose, provided he make no private gain out of it, and I have no doubt this has tended very much to the success we, as an association, have had. This may serve as a hint to any association now forming.—Yours, &c.,

Brechin, May 12, 1890. James D. Ross,
Secretary, Brechin Photographic Association.

TAPS ON GAS BAGS.

[*To the Editor.*]

Sir,—I had my curiosity aroused some time ago as to whether it was better to have the tap at the wedge or butt end of the bag, and I conducted several careful trials, and I have come to the following conclusion—that as regards the quality of the light there is no difference whatever, whilst as regards manipulating the bag it is a disadvantage to have the tap on the thick end of the wedge.—Yours, &c.,

Calais, May 14, 1890. Horace Corbett.

HAS THE LANTERN A SEASON?

[*To the Editor.*]

Sir,—Mr. Kendal, writing in last issue, asks this question. There is a season when we take outdoor negatives, and a season when we make transparencies, also a season when we project our work upon the screen; but as those three go to make *one whole*, the lantern, or more correctly, work connected with the lantern, has no season because it is continuous.—Yours, &c., A. D.

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Society Meetings.

Hackney Photographic Society.—The annual meeting was held on 8th May at Morley Hall, when the following were elected: president, Dr. Gerard Smith; vice-presidents, Dr. Ambrose Kibble, Dr. Roland Smith; and Mr. J. Hubert; treasurer, Mr. Frank Jolly; secretary, Mr. W. Fenton Jones, F.S.Sc., 12, King Edward-road, Hackney; curator, Mr. A. Dean; council, Messrs. W. L. Barker, H. J. Beasley, H. Burton, J. O. Grant, F. Houghton and Dr. J. B. White; auditors, Messrs. C. F. Hodges and H. Smith. On June 12, Mr. A. R. Dresser, of hand-camera renown, gives a paper on this subject. A series of elementary papers are then to follow during the season.

The following gentlemen now constitute the officers of the Photographers' Benevolent Association: President, Mr. J. Traill Taylor; trustees, Captain W. de W. Abney, C.B., F.R.S., and Mr. W. S. Bird; treasurer, Mr. John Spiller, F.C.S.; committee, Messrs. H. D. Atkinson, William Bedford, William Benham, E. Clifton, T. J. Collins, F. W. Cox, T. E. Freshwater, G. T Harris, A. Mackie, J. D. O'Connor, J. S. Rolfe, and E. A Whittemore; auditors, Mr. W. Holt, E. W. Parfitt, H. J. White, and J. W. Zaehnsdorf; hon. solicitor, Mr. William Benham, and hon. secretary, Mr. H. J. Beasley, 65 and 66, Chancery-lane.

East Dulwich and Peckham Photographic Society.—At the meeting on May 2 of this society, Mr. H. G. Banks gave an address on "The Optical Lantern: Its Construction and Use." He has just had built for him by Mr. Pexton a fine triple, fitted with all the latest improvements, the most important of which are the *patent rigid telescopic tubes*; these tubes are a vast improvement over the old sliding arrangement, and no good lantern can be considered complete without them. Their superiority consists of the easy and instant adjustment for any focus lens instead of having to tug and pull the tubes into place, as under the old system the better the tubes were fitted the more troublesome was the focussing, whereas with these patent rigid telescopic tubes it simply entails loosing a screw ring, focussing and tightening. It is also fitted with the Optimus dissolver for triples, which is an exceedingly easy instrument to work, one great advantage being that there is no possibility of accidentally disturbing the bye-passes once they are adjusted, and this is no slight gain when you are working single handed, and the smoothness with which this dissolver works takes a lot of worry off the operator's mind. The lantern is also fitted with the usual complement of lenses, any set of which can be changed in an instant if desirable.

Toynbee Camera Club.—A Camera Club has been formed in connection with Toynbee Hall, 28, Commercial-street, Whitechapel, called the "Toynbee Camera Club." The following gentlemen have been elected to act as officers for the coming season:—President, Mr. L. M. Biden; vice-president, Mr. A. J. Livingston; treasurer, Mr. J. E. Monk, committee, Messrs. W. H. Jennings, H. S. Malby, G. W. Hatfield, and G. West; hon. sec., Mr. A. E. Birch, 35, Heathland-road, Stoke Newington, N. The club meet every Tuesday evening at 7.30 in the laboratory, Toynbee Hall, for practical work, and organise outings for the summer months. Apparatus and chemicals are provided for members' use. Further information may be obtained by application to the hon. sec.

BRECHIN PHOTOGRAPHIC ASSOCIATION. — Mr. D. Ferrier, F.C.S., president of the Montrose Photographic Association, gave a lecture and demonstration of the autotype process on 7th May. The Autotype Company sent down a selection of their work for exhibition. Mr. Ferrier referred to the beauties of lantern slides by the carbon process as exemplified by Woodbury slides. The making of enlarged negatives for carbon enlargements was fully described, and a few autotypes were developed by the lecturer, and greatly admired by a large audience. It was intimated that the Public Lantern Exhibition of the 5th March was very successful financially, the funds of the association having benefited to the amount of £2 16s. 6d.

HOLBORN CAMERA CLUB.—On May 9, 1890, Mr. T. C. Hepworth delivered a lecture, illustrated by lantern slides, on photographs as applied to illustrated journalism, as exemplified by the *Daily Graphic.* He first showed a copy of a portrait published in a newspaper in 1679. Rolls of paper which were delivered at the office of the *Daily Graphic* were 3¼ miles in length. Transparencies were exhibited showing the way type and illustrations were set up on a flat surface, and the way paper moulds were made from the same. Crude and indistinct sketches of photos were, he explained, elaborated by a staff of artists; they were then photographed, and a zinco-etching was made from the negative so obtained, the whole process being completed in a few hours.

GLOUCESTERSHIRE PHOTOGRAPHIC SOCIETY.—At the annual meeting the president, vice-president, treasurer and committee of last year were re-elected; Mr. A. H. Cluich was elected hon. secretary; the retiring secretary (F. H. Burr) and the Rev. Mowbray Trotter were added to the committee. A lantern outfit, consisting of a pair of mahogany lanterns, with cylinders, regulators, jets, &c., was on view, and it was decided to purchase same for the use of members. The Triennial Exhibition (open) will be held in October or November, and prospectuses in accord with recently expressed ideas will shortly be issued.

CAMERA CLUB.—On May 8th there was a special lantern slide exhibition at the Camera Club, photographs taken on recent tours in Egypt being shown by Messrs. Rodgers, Collins, and Major Nott. Amongst the transparencies were many of excellent quality, and the collection contained a great variety of interesting illustrations of present life and manners in Egypt, with orginal views of the pyramids and other remains and public buildings. Mr. Elder exhibited a large number of photographs recently taken in Madeira and Teneriffe; Mr. Andrew some interesting views of volcanoes in action and other subjects; Mr. Ferrers, landscapes taken on club excursions; and Mr. Crookes some charming pictures of Ightham Moat-house. Other slides by Messrs. Fitz-Payne, Carnell, and Sands were exhibited.

PHOTOGRAPHIC SOCIETY OF IRELAND. — On the 22nd May this society concluded the winter session by a public lantern exhibition in the theatre of the Royal College of Science. There was a large attendance. During the evening two hundred and twenty slides were passed through the lanterns by Mr. J. Carson, C.E.; they were described by the secretary, in the absence through illness of Professor J. Alfred Scott. A large number of the slides were made from negatives used in hand cameras, those causing most amusement having reference to street life in Dublin, particularly in some of the slums of the city.

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"SHORT CUTS."—The promoters of this new and highly successful weekly paper are offering a prize which will increase the ranks of amateur photographers by at least one recruit. A complete photographic set (by Messrs. Mawson and Swan) is to be competed for, and the competition is open to novice and adept alike. This remarkable paper is sold at a halfpenny, and its contributors include the leading men of the day in all sections of society.

Notes and Queries.

Robert Lacy.—Perhaps the most useful lens for you to obtain for your lantern would be one of 5in. or 6in. focus.

Amateur.—(1) Push the light nearer to the condenser; you will find this explained in our last issue; (2) The numbers of this Journal from last August may be obtained at the usual price.

Cornwall asks if anyone can make lantern slides for sale from Stanley's new book on Africa. The illustrations being copyright, permission must first be obtained, but we do not know the cost. Write to Sampson Low and Co., Fetter-lane, London, E.C.

Baphomet writes: "I have just bought an old camera, which I cannot close sufficiently to give a focus with my lens; is there any easy way of making the affair work? If it could be closed about an inch more it would do." *Answer.*—The simplest way is to make a sunk front. If you give us more particulars of the nature of the camera we may be able further to assist you.

C. Sparks.—(1) Soaking the negative in alcohol for a few minutes will cause it to dry readily; (2) The gelatine would melt; (3) The firm you mention would send you the lens on trial if you so wished. It is a rectilinear; (4) Dissolve a small piece of zinc in muriatic acid, then apply a small quantity to the part you want to solder; (5) An admixture of bismuth and solder will melt more readily; (6) Give the lantern a coating of lampblack and lacquer, and when dry, a coating of varnish; this will not give the offensive smell you complain of; (7) The binding cases are now ready.

Binder.—Flour paste is much better than gum or glue for binding.

Wm. C. Chappel.—The pictures sent are very good of their kind, but we do not think they would "take" with the public. We have returned them as requested.

Operator.—We are glad to hear that you can now easily find the focus of a lens.

G. H. Price (Chicago).—We will be pleased to receive a description of the Graphiscioptricon lantern.

Elliott Clymer Co.—Block and particulars received.

S. W. Gardner.—Thanks for your friendly letter. Reports should be sent not later than the 23rd.

L. E. L.—Some makers use chloride of gold and others chloride of platinum for toning wet plate lantern transparencies.

J. B. Colt and Co. (New York).—Box, per International News Company, to hand. Probably in August issue.

E. Davis writes: "Would any of your readers please inform me how it would be possible for me to reflect the front exterior of my public camera-obscura building on the table? When a boy, about thirty years ago, I visited the then camera obscura in Birkenhead Park, and after the man attendant had shown us all the views he moved something, and all of a sudden the picture left the table; and there sure enough on the table we saw the three front sides of the building we stood in. Then one of our number went out and walked up and down the footpath in front of the camera for those inside to see him on the table; then the attendant opened the door and made motions to the party outside to come in. He then closed the door, and we could see the person walk up the path, then mount the steps and actually knock at the door, and see him open it. You may be sure I was very anxious to know at the time how the illusion was produced; but the old man acted soft and would not divulge the secret. Since then I have been there, but no camera is there now. No one knew how it was done, and the old man died and would not tell a living soul the secret, not even any of his own relatives. As I have a public camera obscura on the Folkestone beach, I am very anxious to find out how to do it."

M. Hedley.—Report came too late for full insertion in this issue. In future we would like Society reports on or before the 24th of each month.

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Quarter-plate, 4/6 each; 13/- for three.

Lantern Size same price as ¼-plate.

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NEW HAND CAMERA.

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Specimen of Work, 2 stamps.

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Dear Sirs,—My satisfaction with your Lantern Plates is unbounded. Their quality is so consummately excellent that with the quinol developer, a tyro need not fail in getting good slides. Add two gross lanterns to my order in your hands for other plates.

Yours faithfully,
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To R. W. Thomas & Co.

Rayapuram, Mdaras, 27th July, 1889.

Dear Sirs,—Mr. F. York was kind enough to send me a sample dozen of your Lantern Plates for trial, and I have much pleasure in stating that in my opinion they are the most perfect Plates of their kind.

I do not think you exaggerate in the least in saying that Collodio-Bromide is superseded, for when one can get such perfect Plates for 1s. a dozen, no one would think of going to the trouble of making Collodion Emulsion with its uncertainty and worry.

I spoilt the first of the dozen purposely by giving different exposures on the two halves of the Plate to ascertain their rapidity, but after that I got eleven very beautiful transparencies with the remainder of the dozen, and since that I have used many dozens of your plates with the most gratifying success. I have had some thirty dozen out, and find they keep exceedingly well in this climate, for I used some that had been in a cardboard box some four months and they were perfect as at first.

Yours faithfully,
FRED DUNSTERVILLE.

Messrs. R. W. Thomas & Co., London.

Thomas's Lantern Plates give all colours without Toning, and are warranted to keep indefinitely; in these respects especially they challenge any other make to comparison.

Lantern Plates, on Thin Glass, 3¼in. by 3¼in., 1s. per dozen.

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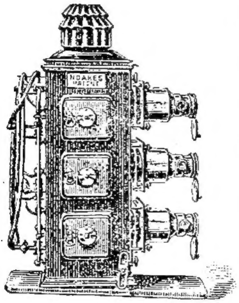

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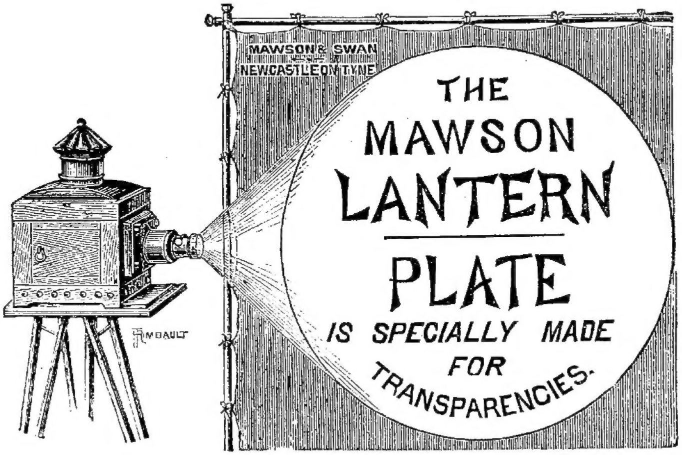

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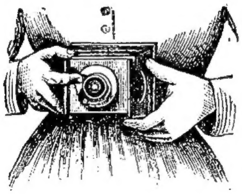

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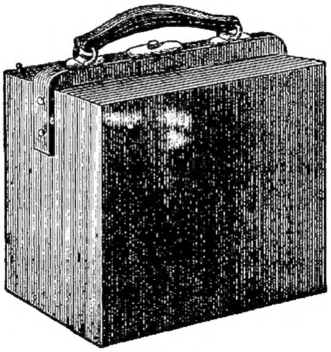

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